

the same locality on *Hypericum Canadense* var. *majus*.—A. J. GROUT,
Johnson, Vermont.

EDITORIAL.

Of the new fields of botanical research developed in the last few years none have shown more rapid extension and greater economic importance than the study of that class of plant diseases due to parasitic bacteria. The first instance of such a disease was brought to notice in 1880 by Burrill, of Illinois. The disease of pomaceous trees, the cause of which he discovered, best known under the name of pear blight, remains at the present time the most fully investigated disease of its class.

In 1884 DeBary published his work entitled *Morphologie und Biologie der Pilze, Mycetozoen und Bacterien*, and in a brief paragraph on bacterial parasites of plants says they have scarcely been observed, and offers the suggestion that the acidity of the cell sap may partially explain their rarity. Probably no mention of the matter would have been made if the account of the yellow disease of hyacinths, with which bacteria are concerned, and which Wakker brought to light the preceding year, had not come to DeBary's attention.

In 1887 DeBary published his lectures on bacteria, which still remains one of the best works we possess on the general biology of this group of organisms. In this work he gave several paragraphs to the subject, mentioning the two diseases already named, and two or three other doubtful kinds, and appears to hold the view that in no case is the actual parasitic nature of bacteria established, so far as vegetable hosts are concerned. He closes the subject, and at the same time his series of lectures, with the statement that "bacteria are not objects of great importance as contagia of diseases affecting plants." This was the opinion of the best informed writer six years ago, and it has not been modified in any general treatise since that time.

Within the last six years, however, the number of discoveries in this line have been astonishingly large, and it is now evident that it has not been so much the scarcity of the diseases as the scarcity of the right kind of investigators, which has kept the subject obscure. The diseases have been all about us, but they have not been recognized.

The larger part of the advance so far made is due to American activity. Well defined diseases of tomatoes, potatoes, melons, oats, corn, sorghum, beans, beets, carnations, violets, pears and apples, and possibly others, are already known, and still more have been suggested as probably of bacterial origin.

Such diseases are often of the most virulent and destructive character, as pear blight and tomato blight; or they are wide spread and exceedingly harmful by decreasing the yield, although not killing the plant or producing marked changes in it, as the bacterial disease of oats. This latter class is not recognized as disease by the cultivator.

The literature of this subject is much scattered, and unusually fragmentary. Few of the diseases have been systematically investigated, and not one has been fully worked out. The life history of the parasite in every case still demands attention, and even the nature of the parasitism itself would be a fruitful field for study. Nevertheless, were what is already known of the subject put together, it would form a fair sized volume.

There can be little doubt that what has so far been discovered is but a beginning. The results are likely to be eventually quite as extensive and important as in animal pathology, except in so far as the latter directly affects or coincides with human pathology.

What is especially needed at this stage of advancement is the continuous and systematic examination of the whole ground by one or more well equipped investigators, and the publication of a critical statement of what may be safely accepted as proven. Even a summarization of the present status of the subject, without critical laboratory study, would be helpful, if well done.

CURRENT LITERATURE.

Biology in an attractive form.

Gibson's recently published work, which he has called "Sharp Eyes,"¹ is an admirable piece of book making, from whatever point of view considered. The work conveys much interesting, curious and useful information about plants and animals, is written in choice language, in direct narrative style, and of high literary quality, and is profusely illustrated with spirited glimpses of nature, most delicately and artistically drawn.

The author has, indeed, "sharp eyes," not only to see small objects, but to penetrate their meaning. He looked at "things not rare, nor seclusive, nor foreign, things which are to be found in almost any of our woods, or fields, or copses; and which any wide-awake saunterer

¹GIBSON, WM. HAMILTON.—Sharp Eyes, a rambler's calendar of fifty-two weeks among insects, birds and flowers. Roy. 8vo. Harper & Brothers, New York, 1892. pp. 322. Illust. \$5.00.